

**WHAT IS CLAIMED IS:**

- 1                   1. An electrosurgical probe, comprising:  
2                   a return electrode including a return electrode head and a return  
3 electrode filament, the return electrode head comprising a return electrode coil;  
4                   an active electrode including an active electrode head and an active  
5 electrode filament; and  
6                   a connection block adapted for coupling the probe to an  
7 electrosurgical power supply, the return electrode filament and the active electrode  
8 filament independently coupled to the connection block.  
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- 1                   2. The probe of claim 1, wherein the return electrode coil  
2 comprises from about 3 to 10 turns.  
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- 1                   3. The probe of claim 1, wherein the return electrode coil  
2 comprises about 6 turns.  
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- 1                   4. The probe of claim 1, wherein the return electrode coil  
2 comprises a helix having a pitch in the range of from about 0.010 to 0.045 inches.  
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- 1                   5. The probe of claim 1, wherein the return electrode coil has an  
2 external diameter in the range of from about 0.070 to about 0.200 inches.  
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- 1                   6. The probe of claim 1, wherein the return electrode coil is  
2 oriented substantially parallel to the longitudinal axis of the return electrode  
3 filament.  
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- 1                   7. The probe of claim 1, wherein the return electrode coil is  
2 wound from a length of wire having a distal terminus, and the wire distal terminus  
3 is arranged within the return electrode coil.  
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- 1                   8. The probe of claim 1, wherein the return electrode coil is  
2 wound in a proximal direction, wherein the first turn of the return electrode coil is  
3 located at the distal end of the return electrode coil.

9. The probe of claim 1, wherein the return electrode filament has a diameter in the range of from about 0.008 to 0.030 inches.

10. The probe of claim 1, wherein a gap exists between each turn of the return electrode coil.

11. The probe of claim 10, wherein the gap is adapted for retaining an electrically conductive liquid against a surface of the return electrode head.

12. The probe of claim 1, wherein the active electrode filament lies within an internal void of the return electrode coil.

13. The probe of claim 1, wherein the active electrode head comprises a hook or a coil.

14. The probe of claim 1, wherein the active electrode filament comprises a metal wire having a diameter in the range of from about 0.006 to 0.020 inches.

15. The probe of claim 1, wherein the active electrode head comprises an active electrode coil.

16. The probe of claim 15, wherein the active electrode coil comprises from about 0.5 to 1.5 turns.

17. The probe of claim 15, wherein the active electrode coil is oriented substantially orthogonal to the return electrode coil.

18. The probe of claim 17, wherein the active electrode filament lies substantially parallel to the return electrode filament.

1 19. The probe of claim 15, wherein the active electrode head  
2 includes a dividing portion, wherein the dividing portion is arranged within the  
3 active electrode coil.

1 20. The probe of claim 19, wherein the dividing portion at least  
2 partially divides a void within the active electrode coil.

1 21. The probe of claim 20, wherein the dividing portion divides  
2 the void within the active electrode coil into two substantially equal portions.

1 22. The probe of claim 19, wherein the dividing portion is  
2 arranged at an angle in the range of from about 30° to 60° with respect to the  
3 longitudinal axis of the active electrode filament.

1 23. The probe of claim 1, further comprising an electrically  
2 insulating spacer located proximal to the active electrode head.

1 24. The probe of claim 23, wherein the spacer encircles the distal  
2 end of the active electrode filament.

1 25. The probe of claim 23, wherein the spacer comprises a  
2 ceramic, a glass, or a silicone rubber.

1 26. The probe of claim 24, wherein the spacer comprises alumina.

1 27. The probe of claim 1, further comprising: a  
2 handle, the handle housing the connection block, and a shaft having a shaft distal  
3 face and a shaft proximal end, the handle affixed to the shaft proximal end.

1 28. The probe of claim 27, wherein the shaft comprises a multi-  
2 lumen extrusion.

1                   29.     The probe of claim 27, wherein the probe further comprises a  
2     an aspiration lumen internal to the shaft.

1                   30.     The probe of claim 29, wherein the aspiration lumen  
2     terminates distally in an aspiration port.

1                   31.     The probe of claim 30, wherein the shaft distal face includes a  
2     first plane and a second plane, and wherein the aspiration port occupies a portion of  
3     the first plane and a portion of the second plane.

1                   32.     The probe of claim 31, wherein the second plane extends  
2     proximally from the first plane.

1                   33.     The probe of claim 32, wherein the second plane subtends an  
2     angle in the range of from about 40° to 50° with respect to the first plane.

1                   34.     The probe of claim 27, further comprising a fluid delivery  
2     lumen internal to the shaft.

1                   35.     The probe of claim 34, wherein the fluid delivery lumen  
2     terminates distally in a fluid delivery port, the fluid delivery port located at the shaft  
3     distal face.

1                   36.     The probe of claim 35, wherein at least a portion of the return  
2     electrode coil is aligned with the fluid delivery port.

1                   37.     The probe of claim 1, wherein the active electrode and the  
2     return electrode each comprises a material selected from the group consisting of  
3     molybdenum, platinum, tungsten, palladium, iridium, titanium, and their alloys.

1                   38.     An electrosurgical probe, comprising:

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a shaft comprising a multi-lumen extrusion, the shaft having a shaft proximal end portion and a shaft distal end portion;  
an electrode assembly at the shaft distal end portion; and  
a connection block adapted for coupling the electrode assembly to an electrosurgical generator.

39. The probe of claim 38, wherein the multi-lumen extrusion comprises a plastic tube.

40. The probe of claim 38, wherein the multi-lumen extrusion comprises a polyurethane elastomer.

41. The probe of claim 40, wherein the polyurethane elastomer is polyether based and includes from about 0.5% to 4% of carbon black.

42. The probe of claim 38, wherein the multi-lumen extrusion includes a plurality of interior lumens.

43. The probe of claim 38, wherein the multi-lumen extrusion includes first, second, third, and fourth lumens.

44. The probe of claim 43, wherein the electrode assembly includes a return electrode and an active electrode, and the first and second lumens accommodate the return electrode and the active electrode, respectively.

45. The probe of claim 43, wherein the third lumen comprises a fluid delivery lumen.

46. The probe of claim 45, wherein the third lumen terminates distally in a fluid delivery port.

47. The probe of claim 43, wherein the fourth lumen comprises an aspiration lumen.

48. The probe of claim 47, wherein the fourth lumen terminates distally in an aspiration port.

49. The probe of claim 42, wherein each of the plurality of interior lumens has a diameter in the range of from about 0.015 inch to 0.100 inch.

50. The probe of claim 38, wherein the electrode assembly comprises an active electrode, the active electrode including an active electrode filament and an active electrode head.

51. The probe of claim 50, wherein the active electrode head comprises a hook.

52. The probe of claim 50, wherein the active electrode head comprises an active electrode coil having about 1 turn.

53. The probe of claim 52, wherein the active electrode head includes a dividing portion, the dividing portion spanning the active electrode coil to form a plurality of voids within the active electrode coil.

54. The probe of claim 38, further comprising a handle affixed to the shaft proximal end portion, the handle housing the connection block.

55. The probe of claim 52, wherein the active electrode comprises a metal wire selected from the group consisting of molybdenum, platinum, tungsten, palladium, iridium, titanium, and their alloys.

56. The probe of claim 52, wherein an edge of the active electrode coil is offset from the longitudinal axis of the active electrode filament by a minimum distance in the range of from about 0.008 to about 0.016 inches.

1           57.     The probe of claim 52, wherein the active electrode coil has a  
2 diameter in the range of from about 0.050 to 0.150 inches.

1           58.     The probe of claim 38, wherein the electrode assembly further  
2 comprises a return electrode, the return electrode including a return electrode  
3 filament and a return electrode head.

1           59.                   The probe of claim 58, wherein the return  
2 electrode head comprises a return electrode coil having from about 3 to 10 turns.

1           60.     The probe of claim 58, wherein the probe further comprises a  
2 connection block adapted for coupling the probe to a high frequency power supply,  
3 and the return electrode filament distal end is coupled directly to the connection  
4 block.

1           61.     An electrosurgical probe, comprising:  
2 a shaft having a shaft proximal end portion and a shaft distal end  
3 portion; and  
4 an electrode assembly at the shaft distal end portion, the electrode  
5 assembly comprising an active electrode and a return electrode, the return electrode  
6 disposed within a lumen of the shaft, the return electrode in the form of a return  
7 electrode coil, the return electrode coil having an internal void, and the return  
8 electrode distal terminus arranged within the internal void.

1           62.     The probe of claim 61, wherein the return electrode coil has  
2 from about 3 to 10 turns.

1           63.     The probe of claim 61, wherein the internal void is  
2 substantially cylindrical.

1           64.     The probe of claim 61, wherein the return electrode distal  
2 terminus is located at the proximal end of the internal void.

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65. The probe of claim 61, wherein the shaft comprises a multi-lumen tube having a plurality of lumens therein.

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66. The probe of claim 65, wherein the multi-lumen tube is an extrusion product.

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67. The probe of claim 66, wherein the multi-lumen tube comprises a polyether based polyurethane elastomer.

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68. The probe of claim 61, wherein the active electrode comprises an active electrode coil having from about 0.5 to 1.5 turns.

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69. The probe of claim 68, wherein the active electrode further comprises a dividing portion arranged within the active electrode coil.

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70. The probe of claim 69, wherein the dividing portion defines two voids within the active electrode coil.

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71. The probe of claim 68, wherein the active electrode coil is flattened.

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72. The probe of claim 71, wherein the active electrode coil is offset from the longitudinal axis of the shaft distal end portion.

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73. An electrosurgical probe, comprising:  
a shaft having a shaft proximal end portion and a shaft distal end portion; and

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an electrode assembly at the shaft distal end portion, the electrode assembly comprising an active electrode and a return electrode, the active electrode comprising a metal disc.



74. The probe of claim 73, wherein the active electrode head has a sharp edge.

75. The probe of claim 73, further comprising a handle housing a connection block, wherein the return electrode includes a distal end portion and a proximal end portion, the proximal end portion inserted directly in the connection block.

76. An electrosurgical probe, comprising:  
a shaft having a shaft proximal end portion and a shaft distal end portion;  
a return electrode comprising a return electrode coil; and  
an active electrode having a distal end portion and a proximal end portion, the distal end portion comprising an active electrode coil having from about 0.5 to 1.5 turns, the active electrode coil oriented substantially orthogonal to the return electrode coil.

77. The electrosurgical probe of claim 76, wherein the active electrode coil includes a dividing portion, the dividing portion at least partially spanning an internal void within the active electrode coil.

78. The probe of claim 76, wherein the active electrode coil is substantially circular in cross-section, the active electrode including a dividing portion, and the dividing portion bisecting the coil at an angle of about 45 degrees with respect to the shaft distal end portion.

79. The probe of claim 76, wherein the active electrode coil is flattened.

1                   80.    The electrosurgical probe of claim 76, wherein the active  
2 electrode coil is substantially disc-shaped.

1                   81.    The probe of claim 76, wherein the return electrode coil  
2 comprises from about 3 to 10 turns.

1                   82.    The electrosurgical probe of claim 76, wherein the active  
2 electrode lies within the return electrode coil.